ABSTRACT

In a video conference system in which multiple video codecs are simultaneously operating to transmit video, audio and other data between participants in real-time, sharing the system's available resources, this invention provides a way for each codec to adapt to changing network load conditions caused by, for example, participants (and hence codecs) joining/leaving the conference (system). To support video in this type of dynamic environment, the codec is designed for complexity and distortion control and is able to make intelligent tradeoffs between complexity, rate, and distortion. For complexity control, the codec monitors the available computational resources of the system during run-time and adapts its encoding/decoding algorithms to best match the complexity measurements. For distortion control, the codec overcomes the limitations of poor quality video at low bit-rates and allows the user to improve the quality of the video in select regions-of-interest.